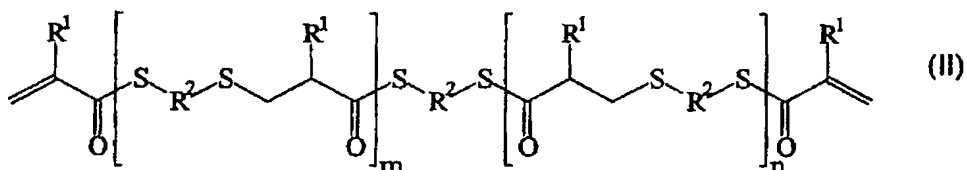


AMENDMENTS TO THE CLAIMS

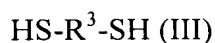
This listing of claims will replace all prior versions, and listings of claims in the application:

Claim 1 (Currently Amended): A mixture for the production of transparent plastics, comprising:

a) a prepolymer, produced from compounds of the formula (I) and (II)



wherein R^1 each independently of one another mean hydrogen or a methyl residue,
 R^2 each independently of one another mean a linear or branched, aliphatic or cycloaliphatic residue or a substituted or unsubstituted aromatic or heteroaromatic residue and m and n each independently of one another mean a whole number greater than 0 with $m + n > 0$, and alkylthiols or polythiols,



wherein R^3 can similarly or differently from R^2 have the meaning stated in R^2 , and

b) at least one radical polymerizable monomer (A) with at least two methyl acrylate groups; and

c) aromatic vinyl compounds,

d) optionally, a radical polymerizable monomer with at least two terminal olefinic groups, which differ in reactivity,

e) optionally, at least one ethylenically unsaturated monomer (B);

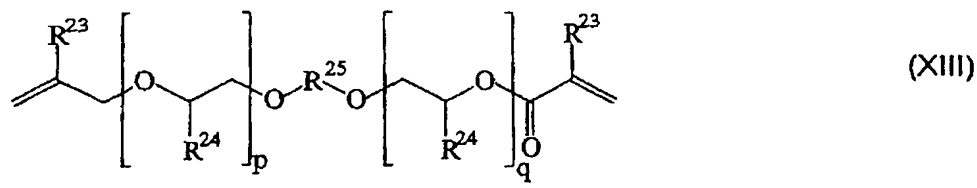
f) or optionally, a mixture of d) and e); and

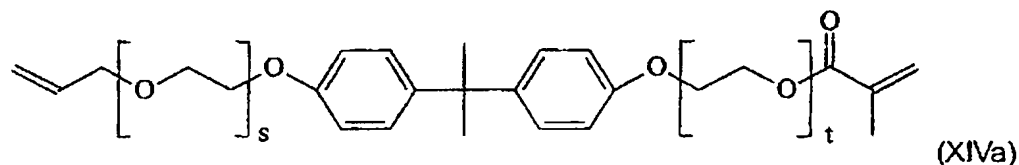


the residue R^{18} is a linking group which contains 1 to 1000 carbon atoms, and the residue Y is a linkage or a linking group with 0 to 1000 carbon atoms and does not contain a carbonyl group directly connected to a carbon atom of the terminal olefinic group and directly connected to the oxygen adjacent to the residue Y in formula (XII)

C=CCOCCOCCOC1=CC=C(C=C1)C(C)(C)C2=CC=C(C=C2)OC3OCCOC(=O)C(=C)C (XIVa)

(ii) a mixture of a compound of formula (XIII) and the compound of the formula
(XIVa)





wherein, in formula (XIII), the residues R²³ and R²⁴ each independently of each other are a hydrogen or a methyl residue, and the residue R²⁵ designates a linear or branched, aliphatic or cycloaliphatic divalent residue or a substituted or unsubstituted aromatic or heteroaromatic divalent residue, and

wherein, in formula (XIVa) s and t are greater than or equal to zero and the sum s + t is in the range from 1 to 20.

Claim 2 (Previously Presented): The mixture as claimed in claim 1, which comprises more than 10 mol.% of compounds of the formula (II) with $m + n = 2$, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 3 (Previously Presented): The mixture as claimed in claim 1, wherein the residue R² of the formulae (I) and/or (II) is an aliphatic residue with 1 to 10 carbon atoms.

Claim 4 (Previously Presented): The mixture as claimed in claim 1, which comprises more than 5.8 mol.% of compounds of the formula (II) with $m + n = 3$, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 5 (Previously Presented): The mixture as claimed in claim 1, which comprises 1 to 50 mol.% of compounds of the formula (I), based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 6 (Previously Presented): The mixture as claimed in claim 1, which comprises 1 to 40 mol.% of compounds of the formula (II) with $m + n = 1$, based on the total quantity of the compounds of the formula (I), (II) and (III).

Claim 7 (Previously Presented): The mixture as claimed in claim 1, which comprises compounds of the formula (II) with $m + n > 3$.

Claim 8 (Previously Presented): The mixture as claimed in claim 1, wherein a total content of compounds of the formula (I), (II) and (III) is at least 5.0 wt.%, based on the total weight of the mixture.

Claim 9 (Previously Presented): The mixture as claimed in claim 1, which comprises at least one monomer (A) which is copolymerizable with the prepolymers prepared from the monomers of the formulae (I), (II) and (III).

Claim 10 (Previously Presented): The mixture as claimed in claim 9, which comprises di(meth)acrylates.

Claim 11 (Previously Presented): The mixture as claimed in claim 1, which comprises styrene as aromatic vinyl compounds.

Claim 12 (Canceled):

Claim 13 (Previously Presented): The mixture as claimed in claim 1, which comprises allylpolyethylene glycol methacrylate.

Claim 14 (Previously Presented): The mixture as claimed in claim 1, which comprises at least one ethylenically unsaturated monomer (B).

Claim 15 (Previously Presented): The mixture as claimed in claim 14, which comprises 2-hydroxyethyl methacrylate.

Claim 16 (Previously Presented): A process for the production of transparent plastics, comprising polymerizing a mixture as claimed in claim 1.

Claim 17 (Previously Presented): A transparent plastic obtained by a process as claimed in claim 16.

Claim 18 (Previously Presented): The plastic as claimed in claim 17, wherein a refractive index of the plastic according to DIN 53491 is greater than 1.59.

Claim 19 (Previously Presented): The plastic as claimed in claim 17, wherein an Abbé number of the plastic according to DIN 53491 is greater than 36.

Claim 20 (Previously Presented): The plastic as claimed in claim 17, wherein a mean value of the diameter of a ball which does not damage a test specimen in a falling ball test is ≥ 18 .

Claim 21 (Previously Presented): The plastic as claimed in claim 17, wherein a transmission of the plastic according to DIN 5036 is $\geq 89\%$.

Claim 22 (Previously Presented): The plastic as claimed in claim 17, having a glass transition temperature of greater than 80.0°C.

Claim 23 (Previously Presented): A mixture, containing:

- (a) a mixture as claimed in claim 1; and
- (b) at least one photochromic dye.

Claim 24 (Previously Presented): A photochromic material, comprising: a mixture as claimed in claim 23.

Claim 25 (Previously Presented): A method of using a photochromic material, comprising:

incorporating said photochromic material as claimed in claim 24 in a lens or a glass pane or a glass insert.

Claim 26 (Previously Presented): A method of using a transparent plastic, comprising: incorporating said transparent plastic as claimed in claim 17 in an optical lens.

Claim 27 (Previously Presented): An optical lens, comprising: a transparent plastic as claimed in claim 17.

Claim 28 (Canceled):

Claim 29 (Previously Presented): A lens, a glass pane or a glass insert, comprising:

the photochromic material as claimed in claim 24.

Claims 30-31 (Canceled):

Claim 32 (New): The mixture as claimed in claim 1, wherein component d) is present.

Claim 33 (New): The mixture as claimed in claim 1, wherein component f) is present.